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*To ensure access to high-quality,
patient-centered, cost-effective health
care to Los Angeles County residents
through direct services at DHS facilities
and through collaboration with
community and university partners.*



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February 04, 2014

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

**AUTHORIZE THE PURCHASE OF NEW VIRTUAL DESKTOP
INFRASTRUCTURE HARDWARE AND SOFTWARE FOR THE
DEPARTMENT OF HEALTH SERVICES DATA CENTERS
(ALL SUPERVISORIAL DISTRICTS)
(3 VOTES)**

**CIO RECOMMENDATION: APPROVE (X) APPROVE WITH MODIFICATION
()
DISAPPROVE ()**

SUBJECT

Authorize the acquisition of new Virtual Desktop Infrastructure hardware and software for 3,000 desktop users across the Department of Health Services.

IT IS RECOMMENDED THAT THE BOARD:

Authorize the Internal Services Department (ISD), as the County's Purchasing Agent, to proceed with the acquisition of new Virtual Desktop Infrastructure (VDI) hardware, software, and professional services for all Department of Health Services (DHS) Data Centers, with a total cost of \$7,559,294.

ADOPTED

BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

18 February 4, 2014

Sachi A. Hama
SACHI A. HAMA
EXECUTIVE OFFICER

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

Approval of this action will allow for the acquisition of new VDI hardware, software, and professional services, which includes support, configuration, installation, testing, three years of maintenance, and a three year warranty for all six DHS Data Centers. This effort is part of DHS' various systems consolidation strategies and also supports the new Electronic Health Record (EHR) System known as the Online Real-Time Centralized Health Information Database (ORCHID). The new VDI hardware and software is needed to: 1) centralize user and desktop management within each local DHS Data Center to provide user desktop access, while reducing the ongoing operating costs of managing, maintaining, and servicing 3,000 users and their desktops across all DHS facilities; 2) enable the use of lower cost zero-client terminals in the place of desktop personal computers for access by users; 3) provide enhanced security by centralizing administration of approved user desktop applications, user access permissions, and enabling single user sign on through a badge-based Radio Frequency Identification (RFID) System; and 4) as needs increase, provide for future growth as the hardware will include sufficient data and computing capacity to meet DHS' current needs.

In addition, DHS has embarked on an effort to replace its current clinical information system – the QuadraMed Affinity suite – with ORCHID. As part of this effort, DHS completed a technical readiness assessment (assessment). Based on the results of the assessment, it was determined that the ORCHID System requires virtual hardware (desktop) upgrades to support the ORCHID software. As a result, some of the current hardware (legacy desktops) will be replaced with new virtual hardware. The current hardware (legacy desktops) will be repurposed throughout the DHS. These efforts are part of DHS' goal of standardizing desktop images across DHS facilities.

Implementation of Strategic Plan Goals

The recommended action will support Goal 1, Operational Effectiveness, of the County's Strategic Plan.

FISCAL IMPACT/FINANCING

The total one-time estimated net cost of the hardware and software is \$7,559,294 and includes professional services, three years maintenance, and a three year warranty. The details comprising the estimated total costs are shown in Attachment II.

Funding is included in DHS' Fiscal Year (FY) 2013-14 Final Budget.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

On October 16, 2001, the Board approved the classification categories for fixed assets and new requirements for major capital assets purchases requiring County departments to obtain Board approval to purchase or finance equipment with a unit cost of \$250,000 or greater prior to submitting their requisition to the County's Purchasing Agent.

The County's Chief Information Officer recommends approval of this purchase and that Office's Analysis is attached (Attachment I).

CONTRACTING PROCESS

This is a commodity purchase under the statutory authority of the County's Purchasing Agent. This acquisition will be competitively bid by the County's Purchasing Agent in accordance with the standard County Purchasing Policies and Procedures established by ISD.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Approval of the recommendation will enable continued implementation of DHS' various systems consolidation strategies and also supports the ORCHID software.

Respectfully submitted,



Mitchell H. Katz, M.D.
Director



RICHARD SANCHEZ
Chief Information Officer

MHK:RS:lr

Enclosures

c: Chief Executive Office
County Counsel
Executive Office, Board of Supervisors
Internal Services Department



RICHARD SANCHEZ
CHIEF INFORMATION OFFICER

Office of the CIO
CIO Analysis

NUMBER:

CA 14-02

DATE:

12-26-13

SUBJECT:

**APPROVAL OF PURCHASE OF NEW VIRTUAL DESKTOP
INFRASTRUCTURE HARDWARE AND SOFTWARE
FOR THE DEPARTMENT OF HEALTH SERVICES DATA CENTERS**

RECOMMENDATION:

☒ Approve

☐ Approve with Modification

☐ Disapprove

CONTRACT TYPE:

☐ New Contract

☐ Sole Source

☐ Amendment to Agreement

☒ Other: Purchase Order

CONTRACT COMPONENTS:

☒ Software

☒ Hardware

☐ Telecommunications

☒ Professional Services

SUMMARY:

Department Executive Sponsor: **Mitchell H. Katz, M.D., Director,
Department of Health Services**

Description: Authorize the Internal Services Department (ISD), as the County's Purchasing Agent, to proceed with the purchase of new Virtual Desktop Infrastructure (VDI) hardware, software, and professional services for all Department of Health Services (DHS) Data Centers, with a Phase 1 cost of approximately \$7,559,294.

Contract Amount: **\$7,559,294 (Phase 1 only)**

Funding Source: **Capital Project – ORCHID Fund
(J-16-HE) Fiscal Year 2013-14 Final Budget**

☐ Legislative or Regulatory Mandate

☐ Subvened/Grant Funded:

**Strategic and
Business Analysis****PROJECT GOALS AND OBJECTIVES:**

This effort is part of DHS' various systems consolidation strategies and supports the new Electronic Health Record (EHR) System known as the Online Real-Time Centralized Health Information Database (ORCHID).

The new VDI hardware and software is needed to:

1. Centralize user desktop access, and reduce ongoing operating costs of managing, maintaining, and servicing of virtual desktops across all six DHS facilities;
2. Enable access to virtual desktops by medical staff from multiple locations within facilities;
3. Provide enhanced security (using dual factor authentication as needed) by centralizing administration of approved user desktop applications, user access permissions, and enabling single user sign on through badge-based Radio Frequency Identification (RFID) System; and
4. Provide for future growth as the hardware will include sufficient data and computing capacity to meet DHS' current needs and allow future expansion as needs increase.

BUSINESS DRIVERS:

This initiative will streamline management of desktops and give the flexibility for users to access information seamlessly from anywhere. In addition, DHS completed a technical readiness assessment and found that ORCHID requires hardware (desktop) upgrades to support the ORCHID software and determined that VDI is a more efficient implementation.

PROJECT ORGANIZATION:

Enrique Garcia, Associate Chief Information Systems, is DHS' IT Project Executive Sponsor and managed by Brenny Ortega, Principal Network Systems Administrator. Members from each facility will lead this effort throughout DHS. A detailed project structure that will include DHS resources and vendor resources is in place. An estimated 25 member team between DHS and vendors will be committed to ensure successful implementation of this project.

PERFORMANCE METRICS:

This project will be measured on the following success criteria:

CPU density will be reduced from 2 to 1 and improve storage efficiency by 75 percent.

Increase manageability of the environment, including security and the ease of access by users from anywhere.

STRATEGIC AND BUSINESS ALIGNMENT:

VDI supports Goal 1, Operational Effectiveness, of the County's Strategic Plan.

PROJECT APPROACH:

In December 2012, DHS performed a comparative a Return on Investment/Total Cost of Ownership analysis between Citrix and VMWare products, consulted Gartner for recommendations, obtained input from Southern California IT Executives, and determined VMWare as the preferred VDI solution vendor. DHS then completed a successful proof of concept with 100 desktops. This was completed in February 2013. Following this, DHS initiated a pilot phase with more than 300 desktops across DHS' facilities. This led to the preliminary Production Design document. The following are the phases DHS will undertake for the full implementation. DHS will implement this in a phased and structured manner given all the other strategic initiatives that are going to be implemented in the same time frame.

Phase 0:**A. December 2013 - April 2014**

1. Review and validate initial design for each of two deployments (centralize vs. hub and spoke) options and get a total buy-in from all the facilities to the approach.
2. Complete billing of materials for the purchase.

Phase 1:**A. April 2014 - August 2014**

1. Build and deploy a virtual environment, with storage, at MLK (this environment will support OMC, MLK MACC, and HSA) and at LAC+USC a virtual environment to support RLA, HUCLA, OVMC, and HD.
2. This initial deployment will support the following sub phases:
 - 500 desktops for LAC+USC,
 - 500 desktops for OVMC,
 - 500 desktops for HUCLA,
 - 1000 desktops for MLK (MLK MACC, HSA, Ferguson, OMC), and
 - 250 desktops for RLA & HD.
3. Configure and deploy 3,000 licenses of AppSense.
4. Deploy the infrastructure and 1,250 Imprivata card readers.

Future Phase 2:**A. July 2014 – April 2015 (Another 3000 desktops)**

1. Additional computer and storage to support 500 desktops for LAC+USC, OVMC, and HUCLA, 1000 desktops for MLK, 250 desktops for RLA and HD.

Future Phases 3, 4, and 5:**A. April 2016, April 2017, April 2018 respectively**

1. Additional computer and storage to support 500 desktops for LAC+USC, OVMC, and HUCLA, 1000 desktops for MLK, 250 desktops for RLA and HD.

	<p>ALTERNATIVES ANALYZED:</p> <p>This is a commodity purchase under the statutory authority of the County's Purchasing Agent. DHS intends to proceed with a brand specific solicitation. Based on DHS' analysis on comprehensive business and technical criteria, the recommended vendor solutions are qualified to meet DHS' current and future requirements.</p>														
Technical Analysis	<p>Analysis of proposed IT solution</p> <p>The VDI hardware and software will provide virtual desktop access for an initial set of 3,000 users across DHS facilities, centralize management of users and desktops within each DHS Data Center, reducing ongoing operating costs of managing, maintaining, and servicing physical desktops across DHS facilities, help improve security of user desktops by centralizing management of approved desktop applications, user permissions, and enabling RFID badge-based authentication to desktops. Virtual environment and storage is expected to meet DHS' current needs and allow for additional hardware expansion, as DHS' needs increase.</p>														
Financial Analysis	<p>BUDGET: GOT TO BREAK DOWN BY YEARS....</p> <p>Costs:</p> <p>This Proposal (Phase 1 – FY 2013-2014)</p> <table> <tr> <td>Hardware Subtotal</td><td>\$ 2,052,460.54</td></tr> <tr> <td>Software Subtotal</td><td>\$ 2,093,736.62</td></tr> <tr> <td>Maintenance and Support Subtotal</td><td>\$ 1,314,083.94</td></tr> <tr> <td>Services</td><td>\$ 1,920,119.11</td></tr> <tr> <td>Sales Tax.....</td><td>\$ 178,893.78</td></tr> <tr> <td>Total:</td><td>\$ 7,559,294.00</td></tr> </table> <p>Future Phases (Phases 2-5 – FY 2014-18)</p> <table> <tr> <td>Estimated Total for Phases 2-5:</td><td>\$14,000,000.00</td></tr> </table> <p>Total Anticipated Project Costs: \$21,559,294.00</p>	Hardware Subtotal	\$ 2,052,460.54	Software Subtotal	\$ 2,093,736.62	Maintenance and Support Subtotal	\$ 1,314,083.94	Services	\$ 1,920,119.11	Sales Tax.....	\$ 178,893.78	Total:	\$ 7,559,294.00	Estimated Total for Phases 2-5:	\$14,000,000.00
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Risk Analysis**RISK MITIGATION:**

This project has several risks. DHS has done a proof of concept and pilot and has a team to execute this but County's Chief Information Office (CIO) recommends a more granular and possibly slower implementation of Phase 1. CIO understands that there are several high priority projects going on, especially the ORCHID Project, and managing change could be an issue. However, it seems there has been enough effort made to get facility buy-in on this project. The team needs to manage the expectations and also the change aspects to mitigate user resistance. The total cost of operations cannot be determined at this time pending completion of design validation in April 2014.

The use and support of VDI technologies is new to DHS and the purchase order includes implementation services to assist in the implementation of the VDI infrastructure and deployment. DHS has performed a requisite amount of due diligence (including the employment of both a Proof of Concept and Pilot Phase approach) and is validating the design before completing the VDI infrastructure and deploying the virtual desktops. DHS will also dedicate technical staff to work with the vendor during the implementation and will acquire necessary support services to facilitate knowledge transfer.

The Chief Information Security Officer (CISO) has reviewed this Agreement and approves DHS' use of two factor authentication for remote access to the VDI infrastructure. CISO did not identify any other IT security or privacy related issues.

CIO Approval**PREPARED BY:**


Sanmay Mukhopadhyay, Sr. Associate CIO

1/23/2014

Date

APPROVED:


Richard Sanchez, County Chief Information Officer

1/23/2014

Date

Please contact the Office of the CIO (213.253.5600 or info@cio.lacounty.gov) for questions concerning this CIO Analysis. This document is also available online at <http://ciointranet.lacounty.gov/>

ATTACHMENT II

DESCRIPTION*	ONE-TIME COST
Hardware Subtotal	\$2,052,460.54
Software Subtotal	\$2,093,736.62
Maintenance and Support Subtotal	\$1,314,083.94
Services	\$1,920,119.11
Sales Tax	\$178,893.78
GRAND TOTAL	\$7,559,294.00 (rounded)

*This acquisition will be competitively bid by the County's Purchasing Agent.